

Application No. 10/775,889

Reply to Office Action

*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method of coating the surface of substrates, comprising the steps of:

bringing a solution of a polymer having derivatized hydroxyl and/or carboxyl groups and/or CN, halogen, and/or amino substituents in a solvent into contact with the surface of the substrate; and

converting the polymer to a polymer form that is less soluble in said solvent by subjecting said derivatized hydroxyl and/or carboxyl groups or CN, halogen and/or amino substituents to a solvolysis reaction ~~so that the polymer is converted to a form showing reduced solubility; and~~

thereby depositing the less soluble polymer form on the surface of a substrate.

2. (Previously Presented) The method as claimed in claim 1, wherein the solvolysis reaction is carried out only partially.

3. (Previously Presented) The method as claimed in claim 1, wherein the polymer has unsaturated groups in at least one of a side chains and a backbone chain.

4. (Previously Presented) The method as claimed in claim 1, wherein the polymer exhibits active groups and/or forms the same during the solvolysis reaction, which groups serve to immobilize the polymer.

5. (Previously Presented) The method as claimed in claim 1, further comprising the steps of coating the surface of the substrate with the polymer and immobilizing the polymer, by means of a crosslinking reaction following the solvolysis reaction.

6. (Previously Presented) The method as claimed in claim 5, wherein the crosslinking reaction is a free-radical reaction or an addition or condensation reaction.

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7. (Previously Presented) The method as claimed in claim 4, further comprising the step of washing the surface of the substrate following immobilization of the polymer.

8. (Previously Presented) The method as claimed in claim 1, wherein the substrate is a particulate substrate and that the polymer has a molar mass of from 1,000 to 50,000 g/mol.

9. (Previously Presented) The method as claimed in claim 1, wherein the substrate is a flat substrate and that the polymer has a molar mass of from 1,000 to 500,000 g/mol.

10. (Previously Presented) The method as claimed in claim 8, wherein the particulate substrate is selected from the group comprising pigments, fillers, fibers, nano particles, and particles of colloidal or micellar systems.

11. (Previously Presented) The method as claimed in claim 1, further comprising the step of coating the surface of the substrate with a nano layer of a polymer.

12. (Previously Presented) A substrate having a polymer-coated surface, produced by a method as claimed in claim 1.

13. (Previously Presented) The method as claimed in claim 1, wherein the polymer is deposited as a nano layer.

14. (Previously Presented) The method as claimed in claim 1, wherein the substrate is a metallic substrate.

15. (Previously Presented) The method as claimed in claim 14, wherein the substrate is made of steel, galvanized steel, aluminum, or an aluminum alloy.

16. (Previously Presented) The method as claimed in claim 1, wherein the substrate is a particulate substrate, selected from the group comprising pigments, fillers, fibers or lamellar particles, nano particles, and particles of colloidal or micellar systems.